

Mass Transit Railway Corporation Limited

Contract C4420 - Modifications to MTRC TST Station

Environmental Monitoring and Audit Report

(March 2003)

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Position: Independent Environmental Checker
Date: 14 April 2003

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EXECUTIVE SUMMARY

This is the 10th report prepared to document the environmental monitoring and audit works conducted for the modification works of MTRC TST Station under Contract C4420. Monitoring works for noise and air impact from the construction works were carried out during the period of March 2003. During this period, the major civil construction activities, carried out within the construction site concerned in the Environmental Permit, involved pile capping beam construction, temporary steel road deck construction, maintenance and adjustment of the erected noise mitigation measures, ground settlement and vibration monitoring and concrete road surface breaking.

With reference to the collected monitoring data and by field observation, environmental conditions of the concerned construction site were said to be satisfactory in general. There were no exceedance of action and limit level occurred in both air and noise impact monitoring at the agreed sensitive receivers. In addition, no formal prosecution and complaint were recorded during this reporting period. As the pipe drilling and grouting works for the southern station extension at current TTM stage have been completed, levels of construction noise generated from the works site were rather lower than those recorded in the past few months. The Contractor continued to provide reasonable effort to maintain and adjust the noise mitigation measures and close supervision in order to control and minimize construction noise generated from the works sites.

As the concerned works site is located in the section of Nathan Road facing to Chungking Mansions and Imperial Hotel, the construction noise and dust levels are affected by the busy traffic on Nathan Road and the works activities performed on KCRC works sites at Mody Road and Middle Road.

1 INTRODUCTION

1.1 Scope of the Report

The MTRCL Environmental Team lead by the ET leader Dr. Kam Chan was responsible to provide baseline and impact environmental monitoring services for the Contract and supervise Contractor's performance on site environmental matters in order to comply with the requirements of the EIA, EM&A manual and environmental permit approved by the Environmental Protection Department of HKSAR.

This is the 10th impact monitoring report to cover the environmental monitoring works in the period of March 2003.

1.2 Structure of the Report

The structure of the report is as follows:

- Section 1 : Introduction – details the scope and structure of the report.
- Section 2 : Project Information – summarizes the scope of the construction activities during this monitoring period and in the coming month.
- Section 3 : Impact Noise & Air Monitoring – summarizes the monitoring programme, locations and results.
- Section 4 : Compliance checking which compares the impact monitoring results with the A/L Levels to determine whether the construction activities have any adverse impacts on the environment and gives comment to the Contractor in order to alleviate those impacts.
- Section 5 : Actions taken in events of noise level exceedance.
- Section 6 : Construction wastes disposal.
- Section 7 : Record of complaints from public.
- Section 8 : Status of permits and licences obtained.
- Section 9 : Action items for site audits recorded.
- Section 10 : Conclusion.

2 PROJECT INFORMATION

2.1 Construction Programme

The construction for modifications to the existing TST MTRC Station are scheduled to commence in April 2002 and to be completed by early 2005. MTRCL is responsible for the overall programming of the construction works. It is recommended that the programming is such that environmental impacts are reduced as far as possible. Site location plan and executive summary for the construction programme is shown on Appendix A Figures TSTEMA-001 & 003.

2.2 Construction Activities

Major site activities carried out by the Contractor during this monitoring period include the followings:-

Southern Works Area (concerned construction site in EP)

- R.C. capping beam construction along the installed sheetpiles and pipe piles continued.
- Ground settlement and vibration monitoring continued.
- Noise mitigation measures for construction works maintained and adjusted to suit the progressing site activities.
- Road surface beaking and excavation for temporary road decks commenced.
- Insatllation of temporary steel road decks for future underground bulk excavation commenced.
- Modification of existing station exit C2 commenced.

Northern Works Area

- Steelfixing and concreting for upstand beam for the escalator adit commenced upon completion of the modification of the existing underground structures.
- Demolition of underground structure for station exit A2 construction continued.
- TTM stage 4 at the fast lane of Nathan Road southbound still implemented.
- Sewage discharge pipe laying and manhole construction completed.

Internal Station Improvement Works

- The new passenger lift car at station concourse and platform level opened to the public.

- ABWF & BS works for the new police reporting centre substantially completed.
- Rearrangement of AFC gates and cabling at station concourse level continued.
- Station control room modification works nearly completed.
- Modification works to the existing station escalator at concourse level continued.
- Renew of floor tiles at station concourse level continued.
- Demolition of existing cavity walls for new entrance F commenced.

Peking Road Gytratory

- Implementation of the traffic scheme continued.

Store at Ferry Street

- Fabrication of construction tools continued.
- Maintenance for construction plants and equipments continued.

Major site activities scheduled to be carried out by the Contractor for next month as follows:-

Southern Works Area (concerned construction site in EP)

- Continue modification works for existing station exit C2.
- Continue ground and vibration settlement monitoring.
- Maintain the provided noise mitigation measures in order to suit the progressing site activities.
- Continue installation of temporary steel road decks for future underground bulk excavation site investigation work in northbound of Nathan Road.
- Commence installation of peizometers for future water level monitoring.

Northern Works Area

- Continue steel fixing and concreting for the escalator structure.
- Continue demolition of underground structures for station exit A2 construction.
- Continue TTM stage 4 at the fast lane of Nathan Road southbound.

Internal Station Improvement Works

- Continue relocation of AFC gates and cabling at concourse level.
- Continue modification to station control room at concourse level.
- Continue modification works to the existing station escalator at concourse level.

- Continue floor tile renew at station concourse level.
- Continue demolition of existing cavity walls for new entrance F.

Peking Road Gyratory

- Continue implementation of the traffic scheme.

Store at Ferry Street

- Continue fabrication of construction tools.
- Continue maintenance of construction equipment and plants.

3 IMPACT NOISE & AIR MONITORING

3.1 Parameters Monitored

Noise

During this monitoring period, regular noise monitoring were made once a week at logging interval of 5 minutes in 30 minutes. 4 sets of readings of 5 minutes average of Leq, L10 and L90 (in A-Weighting) were taken at NTST1, NTST2 and NTST3.

Air

During this monitoring period, regular air monitoring were made once a week. 5 sets of 24 hr TSP monitoring results were obtained at ATST1 and ATST2.

3.2 Monitoring Locations

Noise

Noise monitoring was undertaken at the following locations:

NTST1	Chungking Mansion
NTST2	TST Station Exit C1
NTST3	Wing Lok House

Air

Air monitoring was undertaken at the following locations:

ATST1	Imperial Hotel
ATST2	TST Station Exit E

Location of the project area and above agreed monitoring stations are shown on Appendix A Figures TSTEMA-004 & 005.

3.3 Monitoring Time, Frequency, Duration and Weather

Noise

Noise monitoring was performed once every six days. Below is the time schedule that noise monitoring was performed in this monitoring period.

Location	Date of Monitoring	Time of Monitoring	Climate
NTST1 (Chungking)	4/3/03	4:21pm	Cloudy
	12/3/03	4:48pm	Clear
	21/3/03	4:47pm	Clear
	27/3/03	11:27am	Clear
NTST2 (Station EXIT C1)	5/3/03	1:24pm	Cloudy
	14/3/03	5:09pm	Clear
	21/3/03	4:07pm	Clear
	24/3/03	10:00am	Clear
NTST3 (Wing Lok)	5/3/03	2:14pm	Cloudy
	13/3/03	3:07pm	Clear
	21/3/03	2:15pm	Clear
	27/3/03	4:08pm	Clear

Air

Air quality monitoring were performed once every six days. Below is the time schedule that air monitoring was performed in this monitoring period.

Location	Date of Monitoring	Time of Monitoring	Climate
ATST1 (Imperial)	3/3/03	10:00am	Cloudy
	10/3/03	10:00am	Clear
	17/3/03	10:00am	Clear
	24/3/03	10:00am	Clear
	31/3/03	10:00am	Clear
ATST2 (Station EXIT E)	3/3/03	10:00am	Cloudy
	10/3/03	10:00am	Clear
	17/3/03	10:00am	Clear
	24/3/03	10:00am	Clear
	31/3/03	10:00am	Clear

3.4 Monitoring Schedule for Next Month

Noise

Noise monitoring at NTST1, NTST2 & NTST3 will be performed on 3, 10, 17 and 24 April 2003. Noise monitoring at NTST3 to be proceeded only when there exists line of visual impact to progressing major site activities.

Air

Air monitoring at ATST1 and ATST2 will be performed on 7, 14, 22 and 28 April 2003.

3.5 Monitoring Results

Noise

A summary of the results (Leq30min) recorded during this monitoring period is shown in following table. Relevant details of the noise monitoring results and graphic plots are presented in Appendix B. Having compared the results with the action and limit levels, no exceedance were found.

Summary of Noise Monitoring Results measured in 30 minutes

Location	NTST1 (Chungking Mansion)						
	Date	Leq (30min)	Leq corrected (30min)	L10 (30min)	L90 (30min)	Allowable limit (30min)	Exceedance
	4/3/03	77.3	70.0	80.5	71.0	74	N
	12/3/03	78.4	73.5	81.4	71.2	74	N
	21/3/03	78.1	72.5	82.0	73.2	74	N
	27/3/03	78.2	74.2	81.0	72.8	74	N
	NTST2 (TST Station EXIT C1)						
	5/3/03	75.7	***	79.0	71.5	75	N
	14/3/03	77.1	68.2	80.0	71.5	75	N
	21/3/03	77.3	71.1	79.5	72.5	75	N
	24/3/03	77.6	72.3	78.9	73.1	75	N
	NTST3 (Wing Lok Bldg)						
	5/3/03	71.1	59.3	72.3	69.5	75	N
	13/3/03	72.3	62.7	73.5	68.9	75	N
	21/3/03	69.9	****	71.5	66.0	75	N
	27/3/03	69.3	****	70.5	67.5	75	N

Note: **** measured noise level Leq(30min) less than background noise.

Leq (30min) corrected measured noise level Leq(30min) with background correction

Air

Summary of the results (TSP) for 24 hours is shown in the following table and relevant details of the air quality monitoring results and graphic plots are also presented in Appendix B. Having compared the results with the action and limit levels, no exceedance was found.

Summary of Air Quality Monitoring Results (TSP)

Location	ATST1 (Imperial Hotel)				
Date	Sample Code	Sample Type	TSP(g/m ³)	Action (g/m ³)	Target (g/m ³)
3/3/03	973692	Dust Sample	81.3	197	260
10/3/03	973691	Dust Sample	127.0	197	260
17/3/03	973696	Dust Sample	102.8	197	260
24/3/03	973701	Dust Sample	102.2	197	260
31/3/03	973708	Dust Sample	80.0	197	260
ATST2 (TST Station EXIT E)					
3/3/03	973687	Dust Sample	67.9	194	260
10/3/03	973693	Dust Sample	108.3	194	260
17/3/03	973695	Dust Sample	88.3	194	260
24/3/03	973684	Dust Sample	104.1	194	260
31/3/03	973702	Dust Sample	62.7	194	260

4 ASSESSMENT AND AUDIT OF RESULTS

Air & Noise

With reference to the monitoring results obtained, there was no exceedance of action and limit level occurred in noise & air monitoring taken during this reporting period. In comparison, levels of the construction noise recorded the agreed NSRs at this reporting period are rather lower in average than those obtained in past few months. The Contractor continued to provide close monitoring and supervision to control the construction noise generated from the works sites. By site observation, the major noise source was mainly generated by the busy traffic on Nathan Road, the construction activities related to concrete road surface beaking and KCRC's construction works at Mody Road & Middle Road. Construction noise and dust generated by the Contractor's works were controlled to a reasonable level.

For construction noise control, the Contractor continued to keep daily inspection on the noise mitigation measures in order to ensure their correct installation and proper maintenance. A log-book recording each inspection and any significant change in the measures provided is kept in Contractor's site office located at Room 1401, Tung Ying Bldg, Nathan Road for inspection by IEC, ET and EPD.

5 ACTIONS TAKEN IN EVENTS OF CONSTRUCTION NOISE LEVEL EXCEEDENCE

There were no exceedance recorded during regular noise and air monitoring at the agreed NSR's in this reporting period, hence no follow up actions were required.

6 CONSTRUCTION WASTE DISPOSAL

Dumping locations for disposal of C&D wastes from the construction site were appointed and allocated by EPD/CED. Implementation of the delivery trip ticket system for recording the waste disposal to the public dump and landfill areas continued. The chemical waste would be collected by the licenced collector when accumulated to reasonable amount. The followings are a summary of updated figures of the construction wastes disposal provided by the Contractor:-

	Amount of Construction Wastes disposed		
	Inert Waste (to PFF) (m ³)	Non-inert Waste (to Landfill) (m ³)	Chemical waste (trip)
June 2002	0	0	0
July 2002	0	0	0
August 2002	0	0	0
September 2002	0	82.5	0
October 2002	172.5	427.5	0
November 2002	112.5	285	0
December 2002	82.5	337.5	0
January 2003	43.5	300	1
February 2003	997.5	157.5	0
March 2003	757.5	217.5	0
Accumulated total from June 2002	2166	1753.5	1

It is estimated that a total quantity of approximately 28,000m³ of excavated material would be generated from the construction works. The excavated material is expected to be approximately 50% for each of inert and non-inert material. An estimated quantity of approximately 3,000m³ general fill is required for backfilling upon completion of the extended station box and subway. The reuse of the excavated material on site is not however considered practicable due to the difficulties in stockpiling excavated material on site and limited works areas provided under each TTM stage.

7 RECORD OF COMPLAINTS FROM PUBLIC & EPD

No formal complaint received from EPD and the public during this monitoring period.

Formal Complaints				
	Air	Noise	Water	Others
June 2002	0	0	0	0
July 2002	0	0	0	0
August 2002	0	0	0	0
September 2002	0	0	0	0
October 2002	0	0	0	0
November 2002	0	0	0	0
December 2002	0	1	0	1
January 2003	0	0	0	0
February 2003	0	0	0	0
March 2003	0	0	0	0
Accumulated total from June 2002	0	1	0	1

8 STATUS OF PERMITS AND LICENSES OBTAINED

The followings are the updated status of environmental related permits/licences obtained for the construction activities:-

Type	Reference No.	Commencement Date	Expired Date	Remarks
CNP	GW-UE0028-03	18/2/03	17/4/03	
CNP	GW-UE0366-02	17/9/02	18/9/02	Expired
Chemical waste disposal	WPN5296-212-K2623-06	8/5/02	end of the project	
Waste water disposal	EP482-211-0768-1	28/9/02	end of the project	
C&D waste disposal	EP195-01-24-0353-2002	27/5/02	end of the project	Dumping at allocated Landfill WENT, SENT, NENT
C&D waste disposal	(36) in PWWF/GEN/01 pt(23)	13/2/03	end of the project	Dumping at allocated public filling facility 'Fill Bank at TKO 137'

During this reporting period, no new licences and permits were obtained or required for the works.

9 ACTION ITEMS FOR SITE AUDITS IN PAST MONTH

During this monitoring period, regular weekly joint site inspections lead by the senior staffs from Contractor/MTRCL, were carried out. The Contractor's performance on the environmental matters were assessed and concerned items were raised for rectification. Status of required actions by the Contractor can be summarised as follows:-

Monthly Audit in February 2003		
	Description	Status
1.	The Contractor reminded to have regular check on site to ensure the compliance of relevant environmental regulations, permits and licence	On going
2.	The Contractor reminded to provide proper noise cover to hydraulic breaker during road breaking.	On going
3.	The Contractor reminded to bag material excavated and remove off site asap. The Contractor reminded to implement trip delivery ticket system for recording the amount of excavated and spoil material removed off site	On going
4.	The Contractor reminded to remove temporarily stockpiled CD wastes inside the station asap.	On going
5.	The Contractor continued to provide effort to achieve the environmental targets.	On going
6.	The Contractor reminded to ensure all required construction noise mitigation measures to be followed properly.	On going
7.	The Contractor reminded to provide temporary cover to the working plants for grouting and the stockpiled cement bags	On going
8.	The Contractor reminded to manage and treat the site water properly before discharging the public drain.	On going
9.	The Contractor reminded not to operate any PMEs outside the Southern Extension site boundary for relevant permanent works construction	On going
10.	The contractor reminded to improve the muddy condition at the escalator adit construction site.	Done
11.	The contractor reminded to improve site water desilting system provided at Southern Extension site.	Done
12.	The contractor reminded to remove accumulated timber dust at escalator adit construction site.	Done
13.	The contractor reminded to provide close control on the vehicle site entrances.	Done
14.	The contractor reminded to clean up the rubbish accumulated in the U-channel at Ferry Street store entrance.	Awaited

EPD staff took inspection on the site environmental issues performed by the Contractor on 24 March 2003. During the inspection, they had concern on improper installation of the noise barrier section located in front of Oterprise Square and gave reminder to the Contractor not to operate any PMEs outside the works boundary.

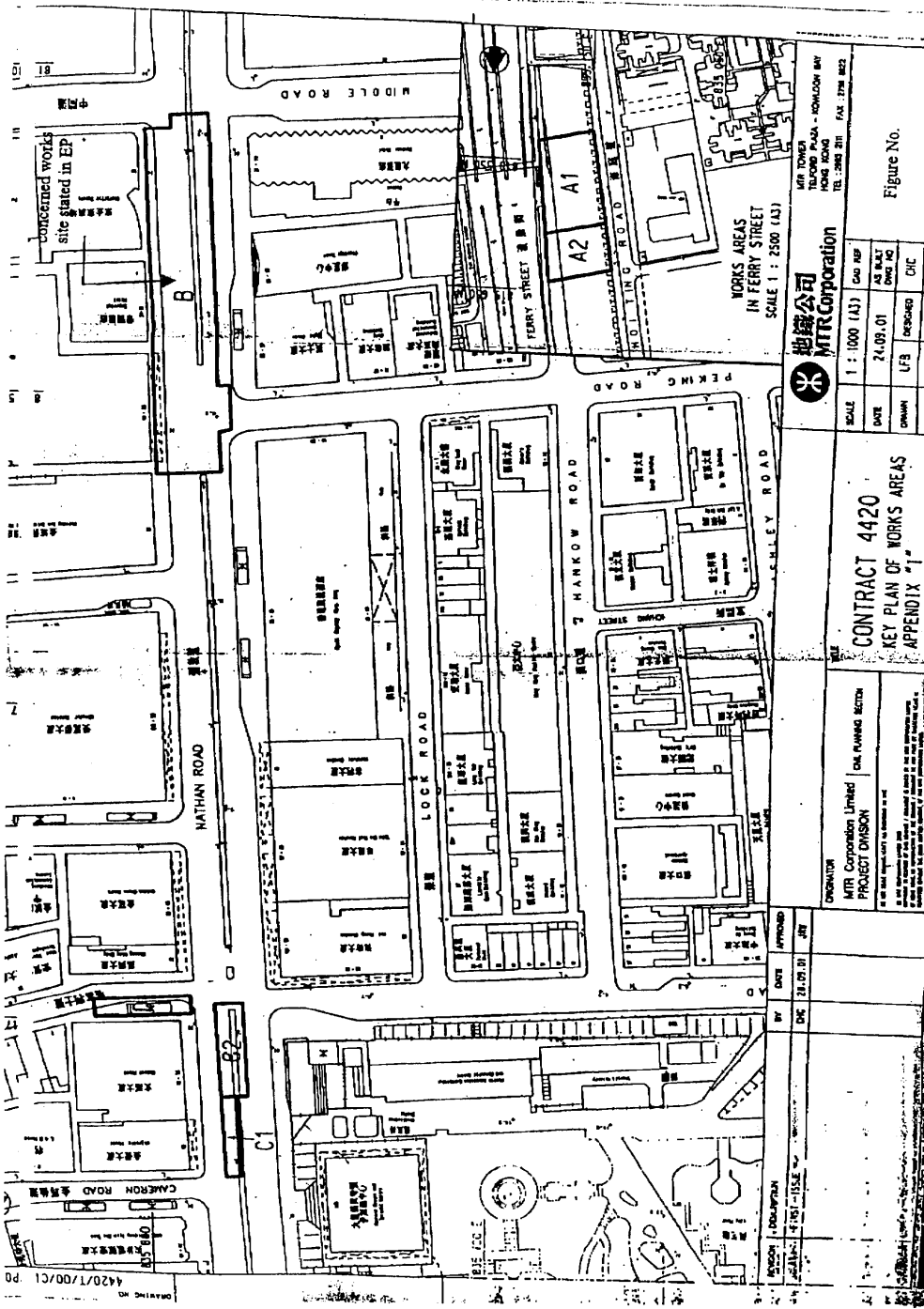
10 CONCLUSION

Following the substantial completion of piling and grouting works at this TTM stage, major civil activities including construction of pile capping beams and installation of temporary road decks were carried out during this reporting period. The Southern Extension site was rather quiet. Regular co-ordination meetings and joint site audits for discussing site environmental matters were held among ER / ET / the Contractor at weekly basis.

By field observation, the environmental pollution control measures provided by the Contractor at the project site were generally acceptable. Noise and dust levels recorded during the monitoring period were in average below the allowable limits, monitoring results were below the action and allowable limits. Concerned site environmental items raised in co-ordination meetings and regular joint site audits have been followed up by the Contractor for rectification properly.

Appendix A

- Reference Figures
- Construction Programme



4420/T/00/C1 P0

MTR TOWER
 1101 WING LOK STREET - HONGKONG
 HONG KONG
 TEL: 2362 2111 FAX: 2362 2023

地鐵公司
 MTR Corporation



SCALE	1 : 1000 (A3)	CRD REF	
DATE	24.09.01	AS BUILT	
DRAWN	UFB	DESIGNED	CFC
CHECKED	CFC	APPROVED	JRW

Figure No.

TSTEMA-001

CONTRACT 4420
 KEY PLAN OF WORKS AREAS
 APPENDIX "1"

ORIGINATOR
 MTR Corporation Limited
 PROJECT DIVISION

BY DATE APPROVED
 CFC 24.09.01 JRW

REVISION
 1. 24.09.01 4.181-155E

4420/T/00/C1 P0

KUMAGAI GUMI GUMI, LTD.
MTRC C4420 TST STATION MODIFICATION WORKS
NORTH END - 3 Weeks Rolling Programme

Mon 24/03/03

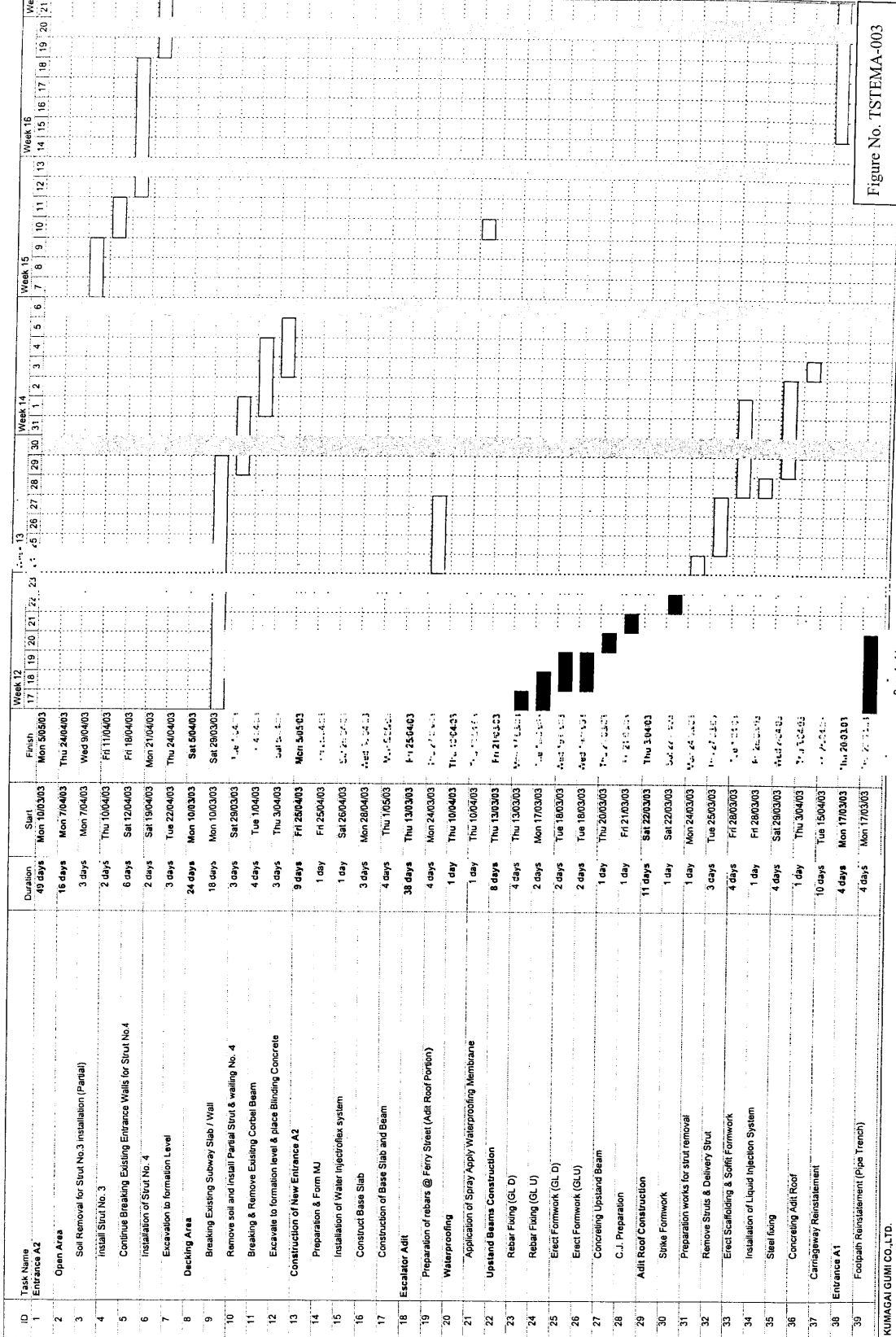
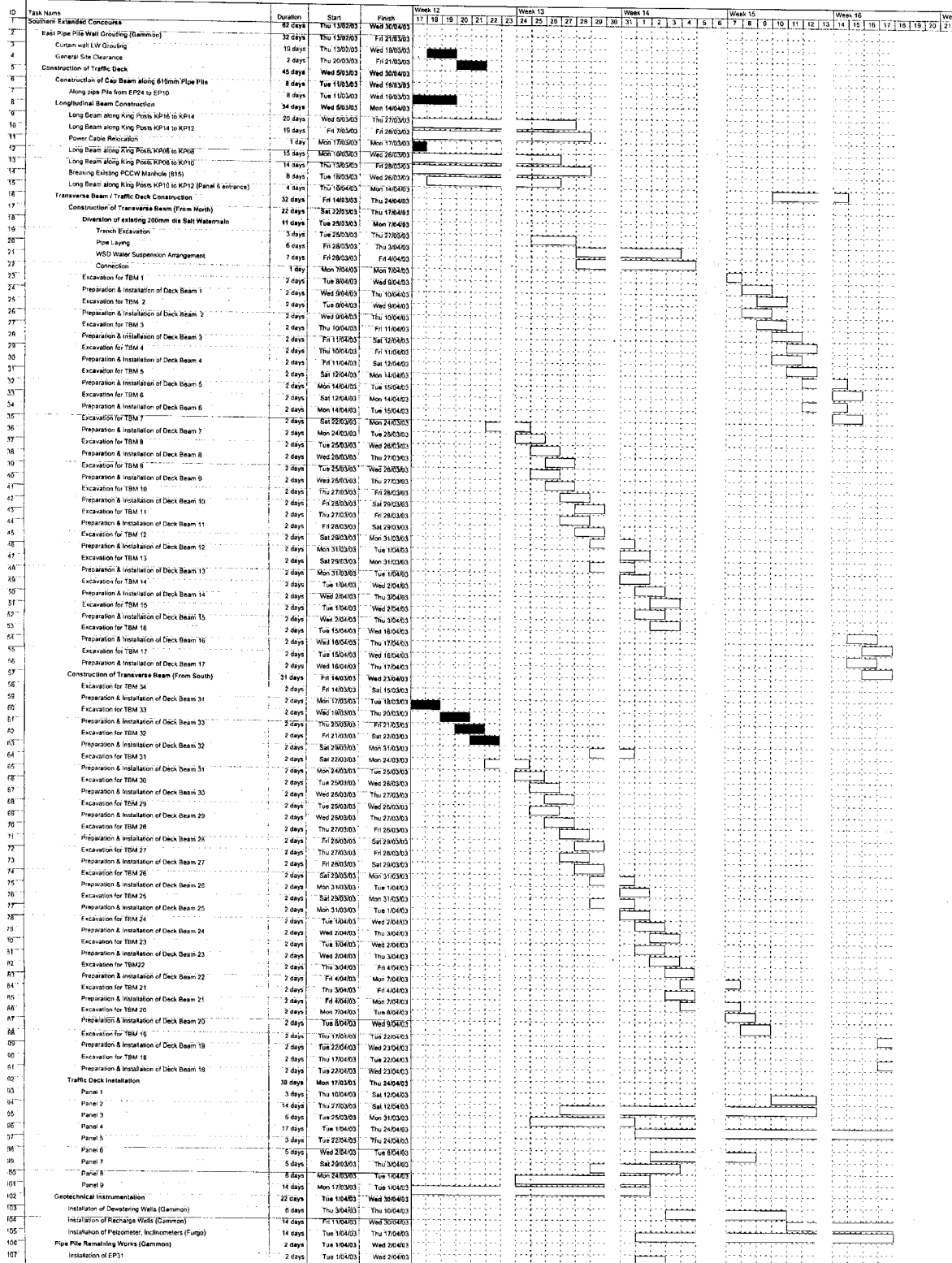
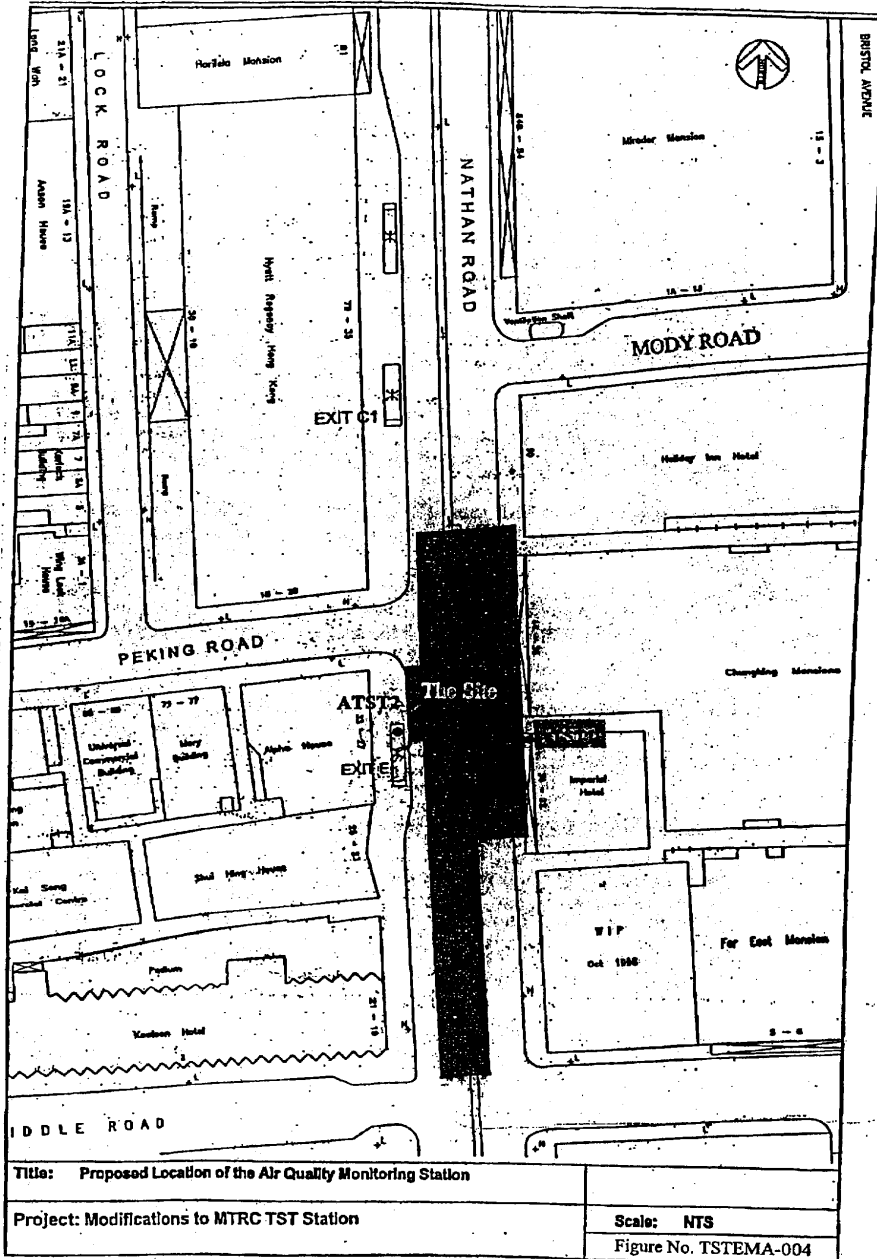
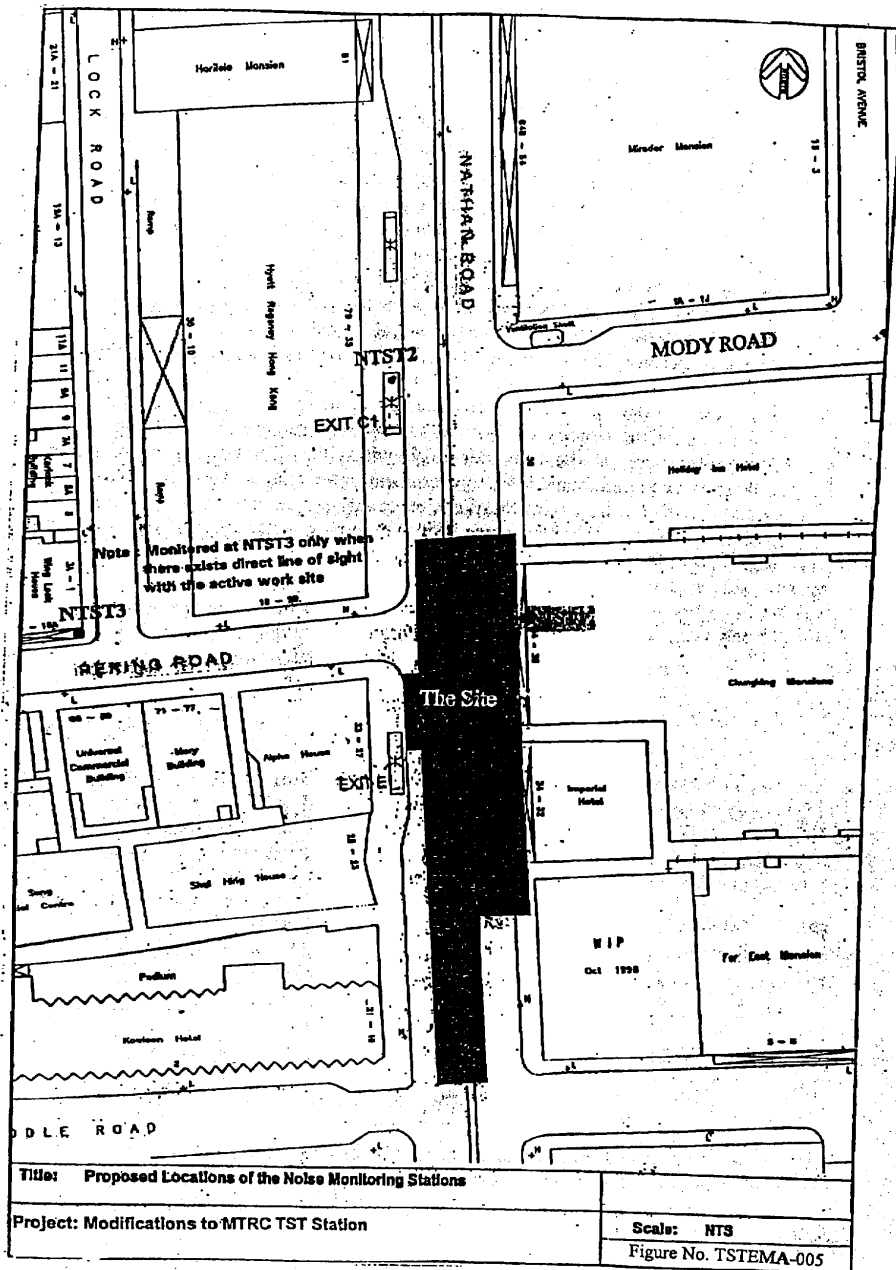


Figure No. TSTEMA-003



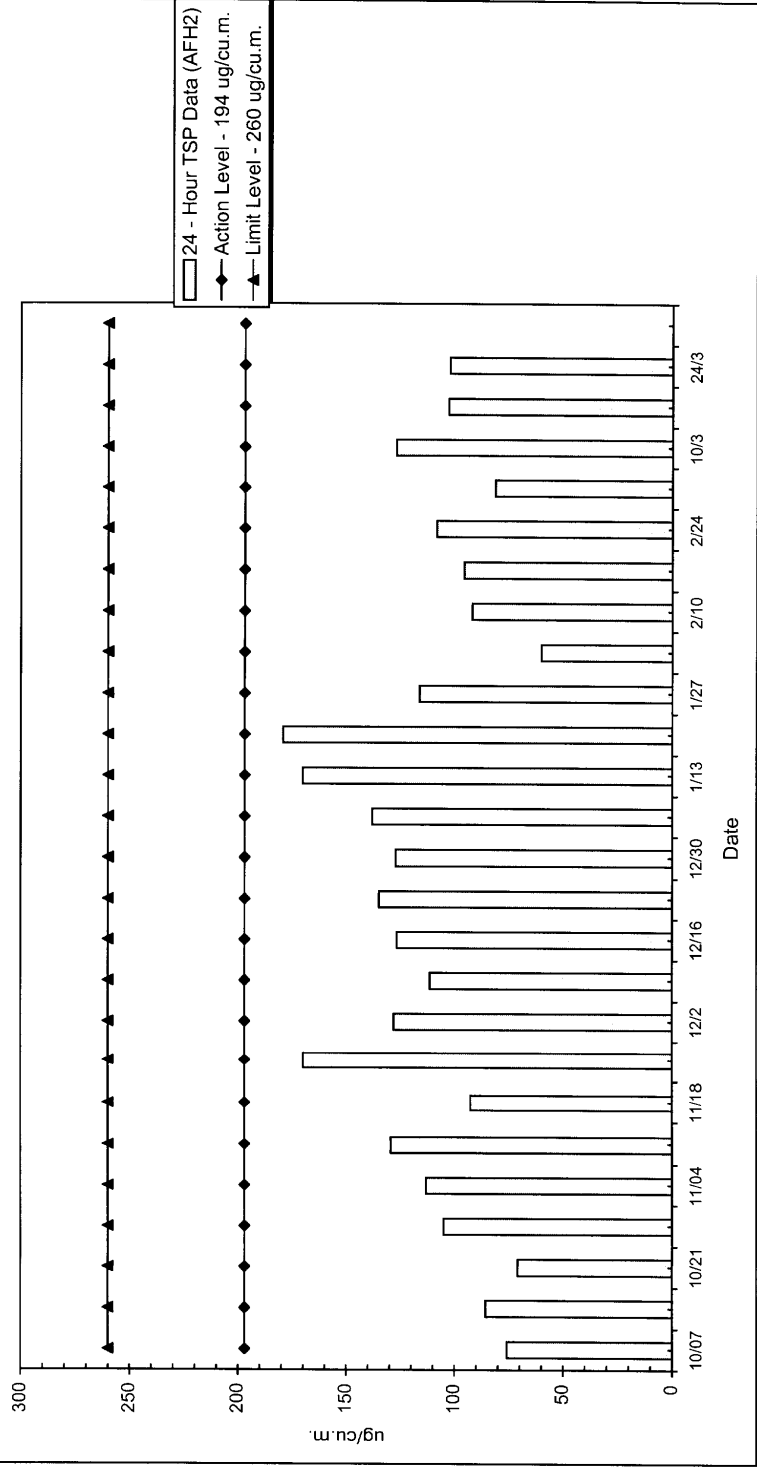




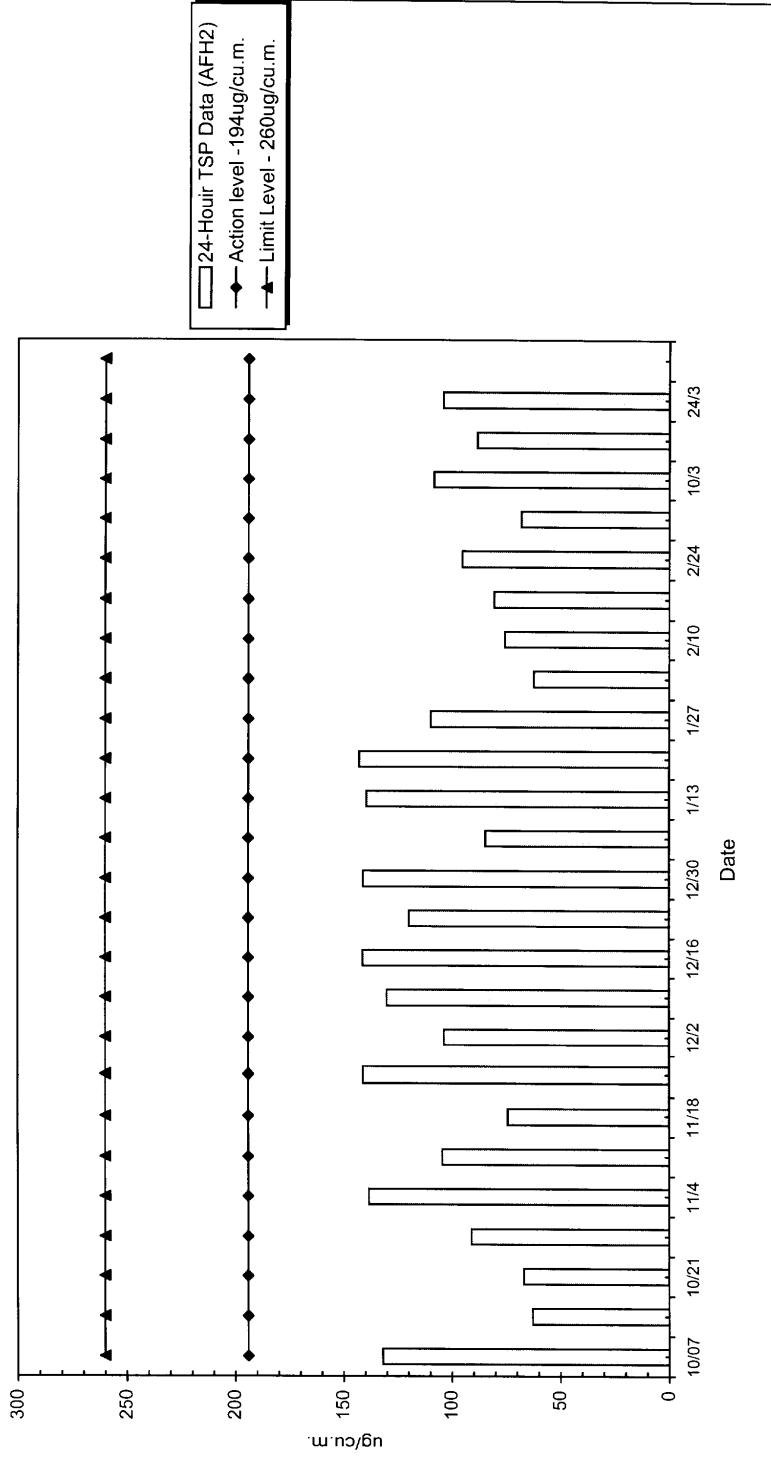
Appendix B

- Environmental Monitoring
Datas/Chart

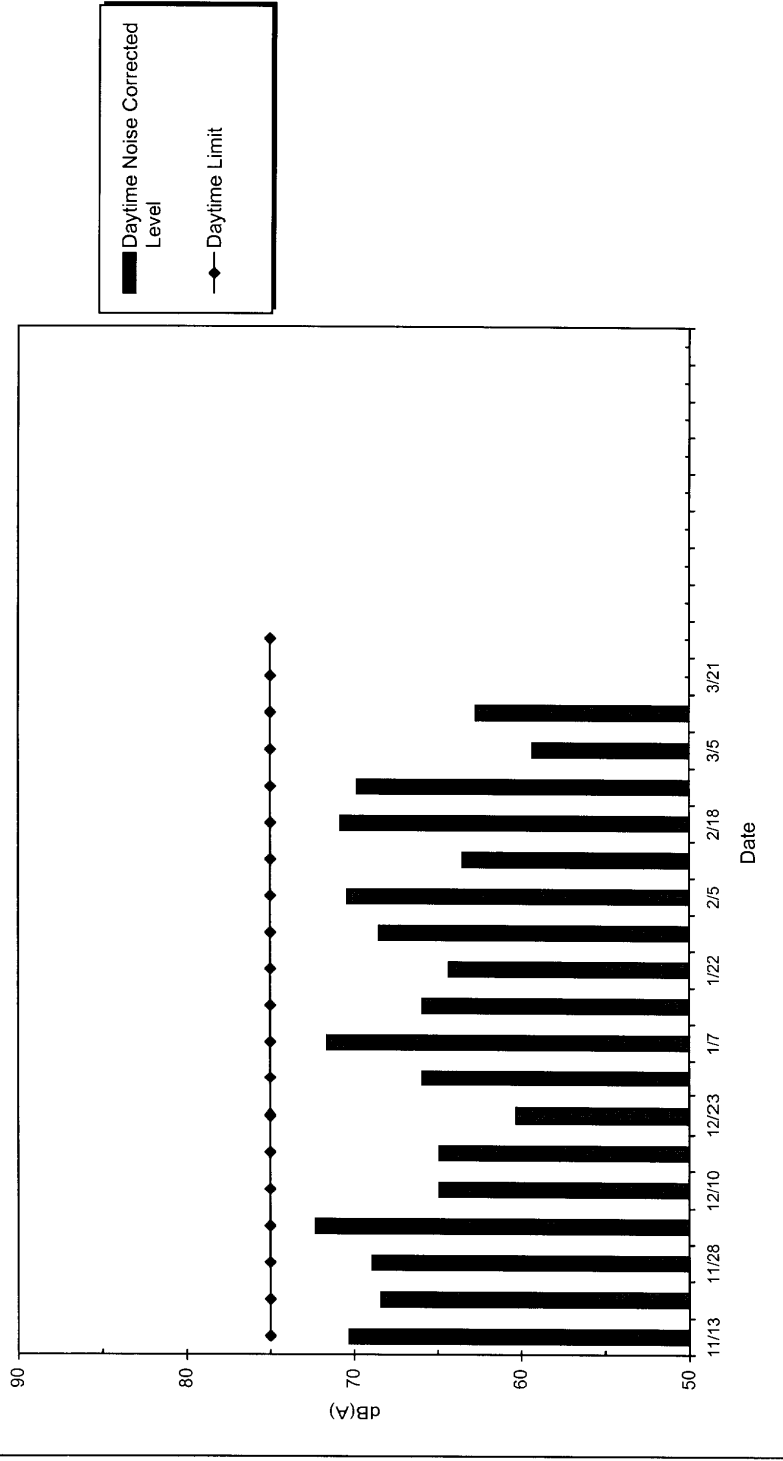
TST-C4420 24-Hour TSP Level at Imperial Hotel Canopy (March 2003)



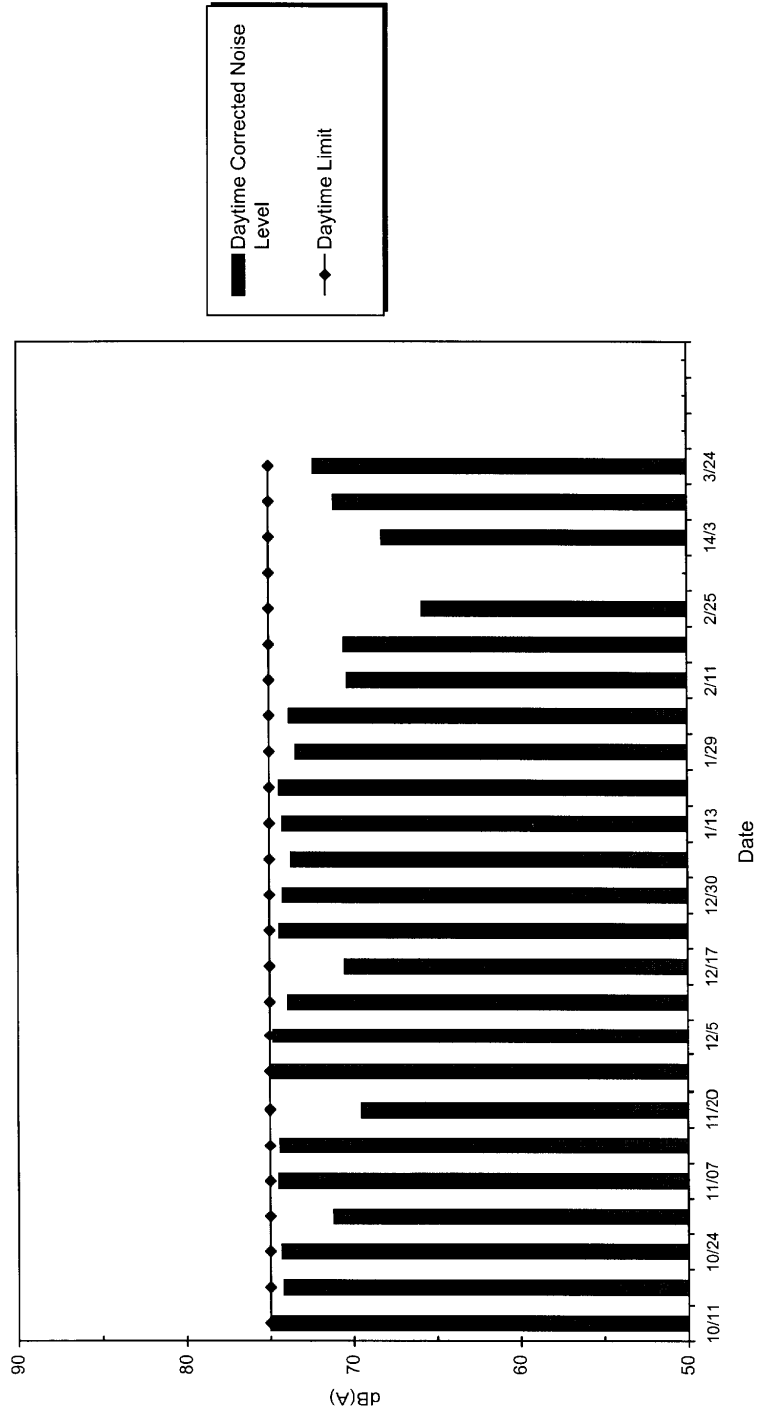
TST-C4420 24-Hour TSP Level at TST Station ExIT E (March 2003)



TST-C4420 Noise Level at Monitoring Station NTST3 (March 03)



TST-C4420 Noise Level at Monitoring Station NTST2 (March 03)



TST-C4420 Noise Level at Monitoring Station NTST1 (March 03)

